

Household Analysis Review Group (HARG)

Communal Establishments – comparison of Household Estimates and Projections (HEP) branch data collection and 2011 Census results

Contents

1.	Purpose.....	2
2.	Background.....	2
3.	Total number of people in communal establishments by the type of communal establishment, Scotland	2
4.	Total number of people in communal establishments by the type of communal establishment, Council areas	3
4.1	Medical and care establishments	3
4.2	Educational establishments	4
4.3	Hotels, guest houses, B&Bs, youth hostels & holiday accommodation.....	5
4.4	Other establishments	6
5.	Conclusion	7

Please treat these figures as 'restricted',
and do not pass them on to anyone else without prior agreement from National Records of Scotland (NRS).

1. Purpose

This paper compares the 2011 communal establishment data collected by the Household Estimates and Projections branch (HEP) to the information on communal establishments from [Release 2A of the 2011 Census](#) (available on the Scotland's census website). This expands on a previous HARG paper ([Paper 1 HARG 2013\(1\)](#)) available on the National Records of Scotland (NRS) website for the meeting of 25 April 2013 which compared the total number of people in communal establishments at Scotland level and Council area level.

2. Background

Communal establishments provide managed residential accommodation, where people live in groups that can't be considered households, for example student halls of residence, prisons and care homes. Communal establishment estimates are produced as part of the household projection process. The proportion of the total population that are resident in communal establishments by age and gender, known as the communal establishment rate, is used to estimate the population that are resident in private households from the mid-year population estimates and projections.

These estimates are produced using a range of administrative data sources to update the communal establishment data from the 2001 Census. They have been updated to use data from 2011 wherever possible so that they provide a better basis for comparison to the 2011 Census. The population used to calculate the communal establishment rates using the administrative data is the mid-year population estimate for 2011.

3. Total number of people in communal establishments by the type of communal establishment, Scotland

In 2011, the administrative data estimated that there were 100,200 communal establishment residents in Scotland, while the 2011 Census estimated that there were 99,000 (a difference of just over one per cent). Another way of comparing the figures is to compare the proportion of the total population that is resident in a communal establishment (the communal establishment rate). This takes into account the fact that the total population is also increasing. In both the 2011 communal establishment estimates and the 2011 Census, the proportion of the Scottish population that is resident in a communal establishment is 1.9 per cent.

When looking at the number of Communal Establishment (CE) residents for different types of communal establishment there are some larger differences in absolute numbers. The number of residents in educational establishments is greater by over 5,000 people in the 2011 CE estimates when compared to the 2011 Census. This difference is likely to be due to an over-estimation of students in university halls of residence as they make up nearly 90 per cent of this category in the 2011 CE estimates.

There is also a difference of nearly 3,500 people in the 'medical and care establishments' category, with the 2011 Census being higher in this case. Some of this difference can possibly be explained by definitional differences as, while we attempt to use definitions that are as close as possible to the census definitions, it is possible that CE managers have interpreted things differently when the data was collected.

The only other category with a difference of over 1,000 residents is the 'Hotels, guest houses, B&Bs, youth hostels & holiday accommodation' category. It is not surprising that there is a relatively large difference in this category as the data used in the 2011 CE estimates was carried forward from the 2001 Census due to a lack of data sources to update this information, therefore we would not expect it to be as accurate.

While there are reasonably large differences in the total number of people who are residents in each communal establishment type, there is quite close agreement on the proportion of the population who live in each type of communal establishment. The largest percentage point differences were in 'educational establishments', which was 0.1 percentage points higher in the 2011 CE estimates than in the 2011 Census, and 'medical and care establishments', which was 0.07 percentage points lower in the 2011 CE estimates.

Table 1: Comparison of 2011 communal establishment estimates by type of establishment, Scotland

	2011 Census		2011 CE Estimate		Difference between 2011 CE Estimate and 2011 Census	
	Number of People ¹	Percentage of population	Number of People	Percentage of population	Number of People	% of population (% points)
All Communal Establishments	99,017	1.87%	100,169	1.89%	1,152	0.02
Medical and care establishments	42,775	0.81%	39,351	0.74%	-3,424	-0.07
Educational establishments	37,670	0.71%	42,907	0.81%	5,237	0.10
Hotels, guest houses, B&Bs, youth hostels & holiday accommodation	5,981	0.11%	4,871	0.09%	-1,110	-0.02
Other establishments	12,591	0.24%	13,040	0.25%	449	0.01

Footnote:

1) The number of people in each communal establishment type has been calculated using the percentages in Figure 23 of Release 2A of the 2011 Census.

4. Total number of people in Communal Establishments by the type of communal establishment, Council areas

This section largely compares the difference in the communal establishment rate for each Council area for an individual communal establishment type. Information on the total numbers of people, rather than communal establishment rates, can be found in [Annex A](#).

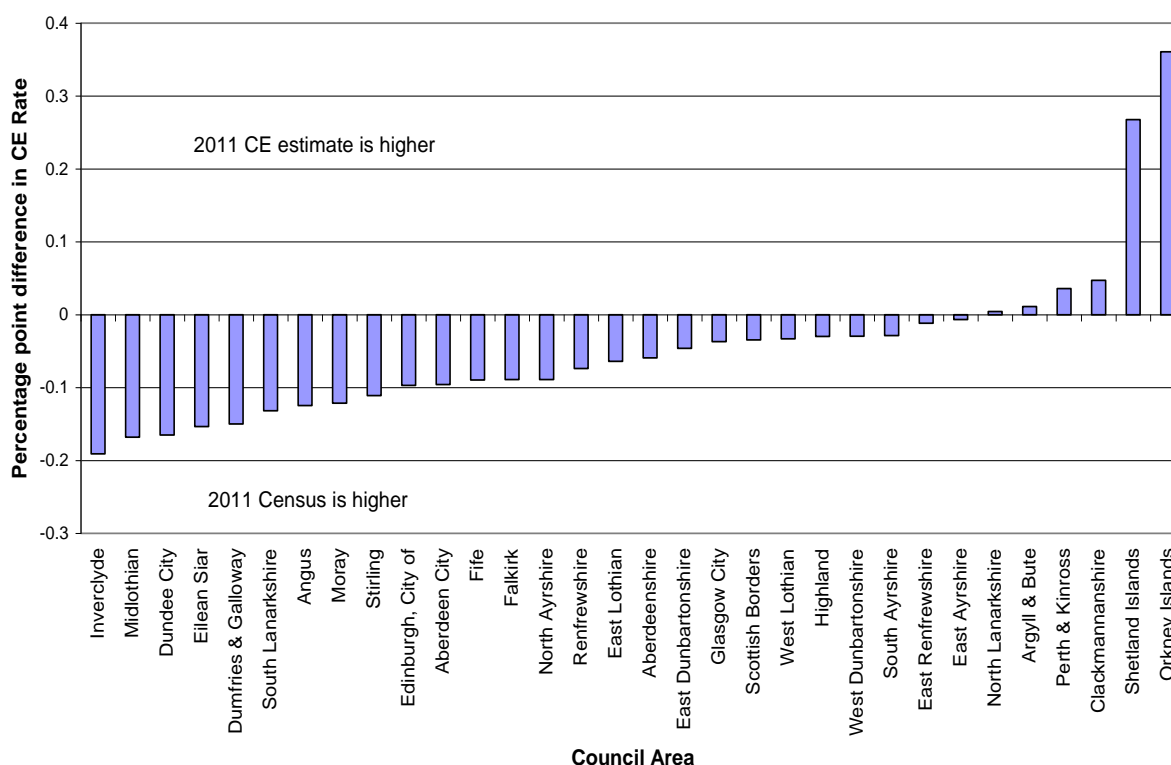
4.1 Medical and care establishments

For 26 Council areas the 2011 Communal Establishment (CE) estimate of the number of people in medical and care communal establishments was lower than the 2011 Census. The six Council areas where the 2011 CE estimates were higher were the Orkney Islands, Shetland Islands, Clackmannanshire, Perth & Kinross, Argyll & Bute and North Lanarkshire.

The largest differences in the total number of residents in medical and care communal establishments were found in Fife, Edinburgh and South Lanarkshire, all having a figure that was at least 300 people lower in the 2011 CE estimates than in the 2011 Census.

Twenty one Council areas have a difference of less than 0.1 percentage points in the communal establishment rate for this type of communal establishment. While the communal establishment rate from the 2011 Census is higher for the majority of councils, the largest differences are found in the Orkney Islands and Shetland Islands where the communal establishment rate is higher in the 2011 CE estimates by at least 0.25 percentage points.

Figure 1: Percentage point difference between the 2011 Communal Establishment (CE) estimates and the 2011 Census for the proportion of the population who are residents in medical and care communal establishments



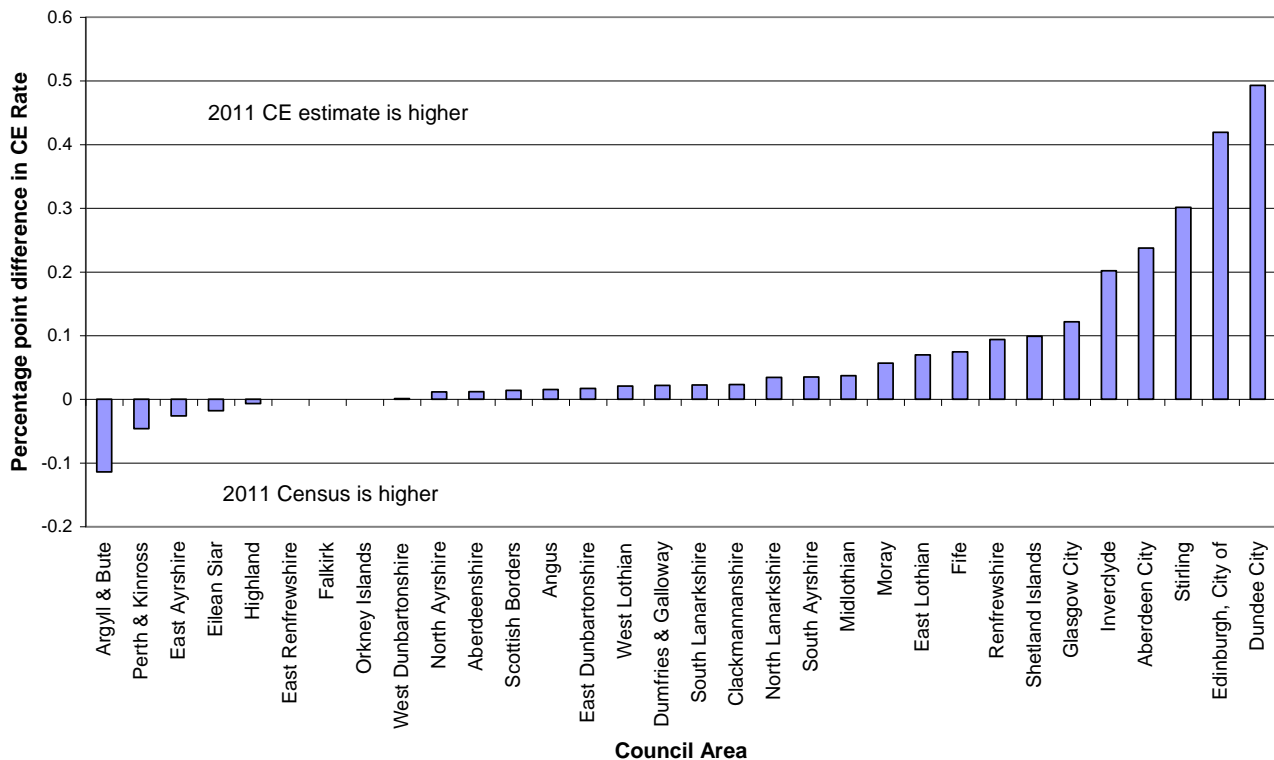
4.2 Educational establishments

There are 24 Council areas where the 2011 CE estimate was higher than in the 2011 Census. Aberdeen City, Dundee City, Fife, City of Edinburgh, Glasgow City and Stirling have the largest differences in the total number of residents in this type of communal establishment, all being at least 250 people higher in the 2011 CE estimate than in the 2011 Census. This is not surprising since these Council areas all contain universities and people in university halls of residence account for nearly 90 per cent of people in this category in the 2011 CE estimates.

The Council areas containing universities also tend to have the largest percentage point differences in the communal establishment rate, with Glasgow City, Aberdeen City, Stirling, Edinburgh and Dundee City all having a communal establishment rate from the 2011 CE estimates that is at least 0.1 percentage points greater than the rate from the 2011 Census.

There are only five councils with a negative percentage point difference and these are Argyll & Bute, Perth & Kinross, East Ayrshire, Eilean Siar and Highland. Of these Councils, Argyll & Bute is the only one with a percentage point difference that is greater than 0.1 percentage points.

Figure 2: Percentage point difference between the 2011 CE estimates and the 2011 Census for the proportion of the population who are residents in educational communal establishments



4.3 Hotels, guest houses, B&Bs, youth hostels & holiday accommodation

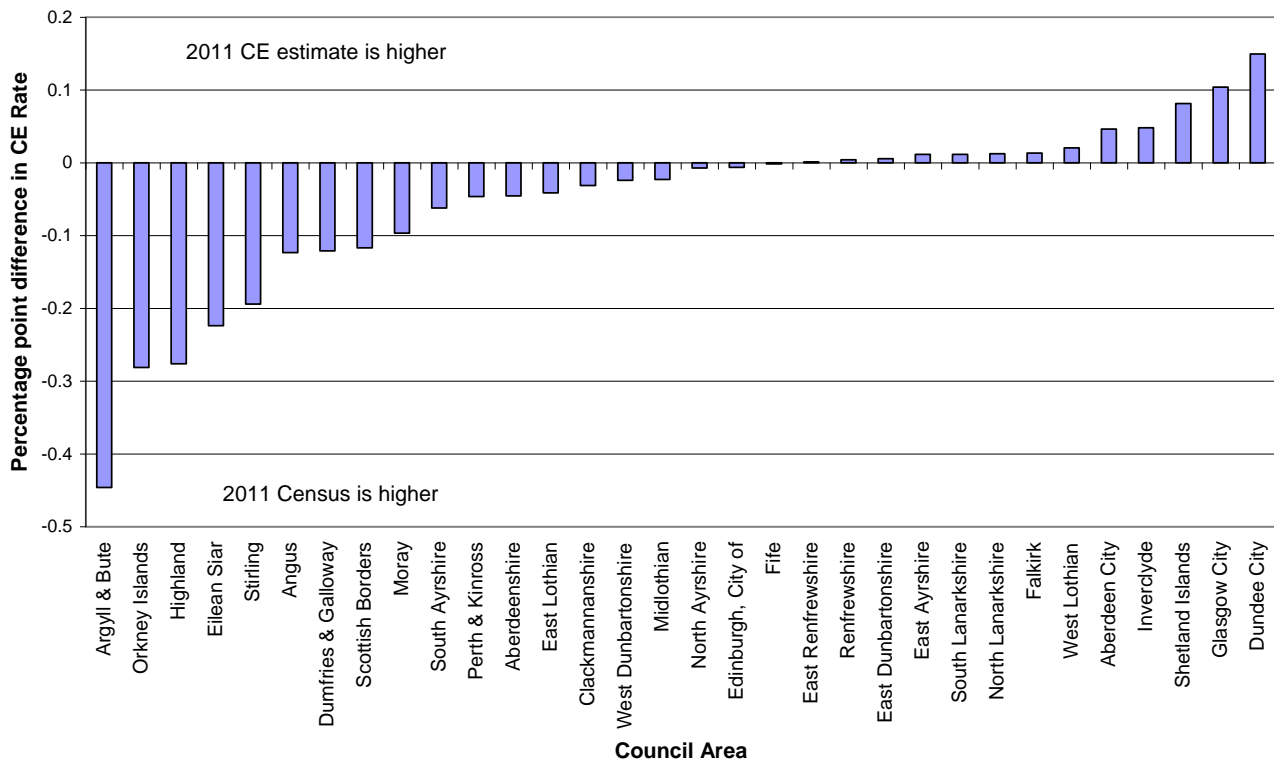
As previously mentioned, we would not expect to have a particularly good match in this category as this category is still based on the 2001 Census in the 2011 CE updates.

Figure 3 shows that the percentage of the population living in this type of communal establishment has been under-estimated in the 2011 CE estimates for just over half of Council areas (19) when compared to the 2011 Census.

The percentage point differences in the communal establishment rate for this type of communal establishment range from -0.45 in Argyll & Bute to 0.15 in Dundee City.

As the 2011 CE figures are based on 2001 Census data, this provides a comparison between the 2001 and 2011 Census figures. Interestingly, there appears to have been a decrease in the number of residents recorded in CEs of this type in cities, between 2001 and 2011, and an increase in more rural areas, in general.

Figure 3: Percentage point difference between the 2011 CE estimates and the 2011 Census for the proportion of the population who are residents in hotels, guest houses, B&Bs, youth hostels or holiday accommodation



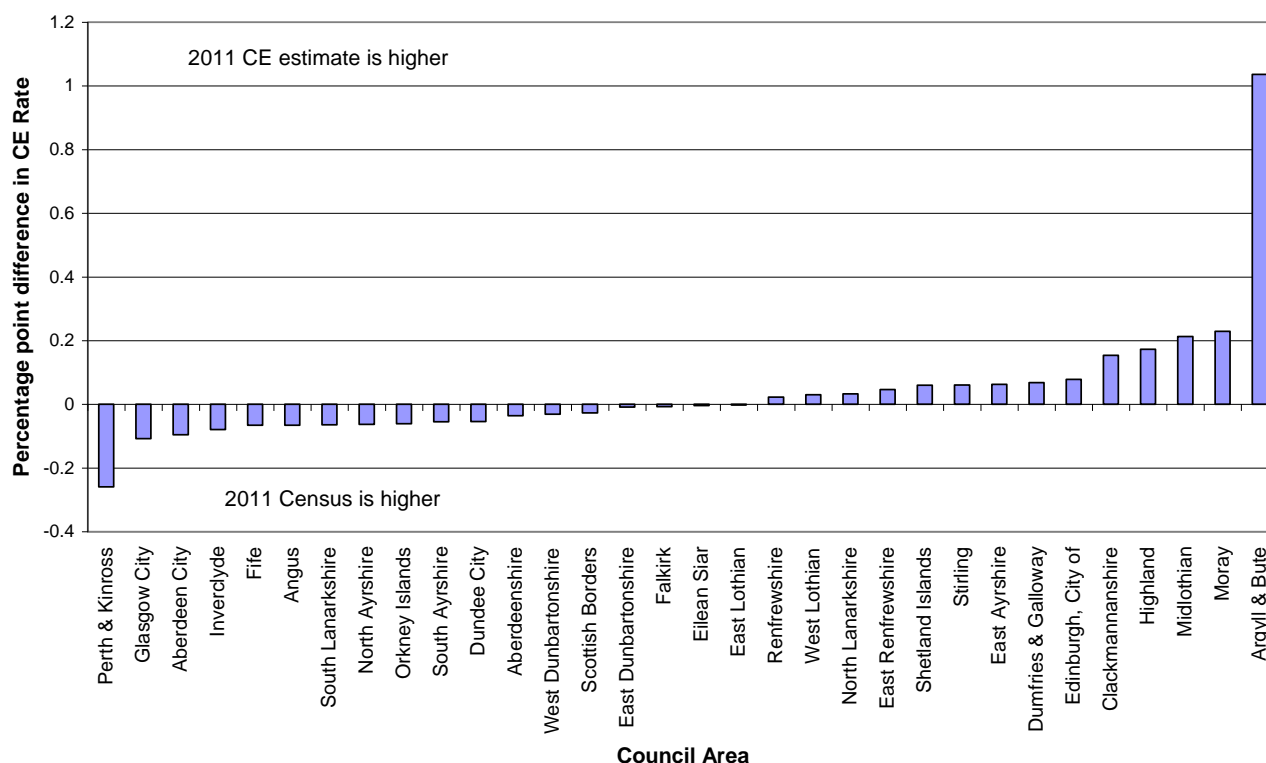
4.4 Other establishments

This category contains armed forces bases, prisons and any other communal establishments not contained in the previous categories.

Figure 4 shows that Argyll & Bute has the largest percentage point difference at 1.0 percentage points. This is likely to be due to the 2011 CE estimates over-estimating the number of armed forces personnel residing at Faslane. Over-estimation of armed forces personnel is also likely to be the main reason for the positive percentage point difference in Moray as well.

For all other Council areas the percentage point difference ranges from -0.26 in Perth & Kinross to 0.21 in Midlothian.

Figure 4: Percentage point difference between the 2011 CE estimates and the 2011 Census for the proportion of the population who are residents in other communal establishments



5. Conclusion

For the whole of Scotland, the 2011 communal establishment data collected by the Household Estimates and Projections (HEP) branch appears to over-estimate the number of people who are residents in educational establishments and under-estimate the number of residents in care or medical establishments when compared to the 2011 Census. However when looking at the communal establishment rates for each type of communal establishment, the administrative data collected by HEP produces rates very close to the rates produced by the 2011 Census.

For medical and care establishments, the administrative data under-estimates the communal establishment rate for the majority of Council areas when compared to the 2011 Census. However the largest differences were in Orkney and Shetland, where the communal establishment rate was over-estimated by the administrative data. There isn't an obvious pattern to which councils have the largest differences in this category but definitional issues are likely to partially explain the differences.

Council areas containing a university tended to have the largest differences in the educational establishments category, with the administrative data over-estimating the number of residents in this category when compared to the 2011 Census.

There also appears to be some differences in the estimation of armed forces personnel. This is particularly an issue in Argyll & Bute where the communal establishment rates in the 'other communal establishments' category differs by more than one percentage point for this council.

Conclusion: We will continue to quality assure our communal establishment rates as more data becomes available from the 2011 Census, and aim to make improvements based on what we learn from doing this. Any comments or suggestions from Household Analysis Review Group (HARG) members would be greatly appreciated.

NRS: Household estimates and projections branch

December 2013

Annex A

Table 2: Comparing residents in medical and care communal establishments, 2011, by Council Area

Council Area	2011 Census		2011 CE Estimate		Difference between 2011 CE Estimate and 2011 Census	
	Number of People ¹	Percentage of population	Number of People	Percentage of population	Number of People	% of population (% points)
Scotland	42,775	0.8%	39,351	0.7%	-3,424	-0.1
Aberdeen City	2,075	0.9%	1,859	0.8%	-216	-0.1
Aberdeenshire	1,933	0.8%	1,788	0.7%	-145	-0.1
Angus	1,170	1.0%	1,028	0.9%	-142	-0.1
Argyll & Bute	681	0.8%	697	0.8%	16	0.0
Clackmannanshire	250	0.5%	275	0.5%	25	0.0
Dumfries & Galloway	1,380	0.9%	1,154	0.8%	-226	-0.1
Dundee City	1,295	0.9%	1,052	0.7%	-243	-0.2
East Ayrshire	907	0.7%	898	0.7%	-9	0.0
East Dunbartonshire	546	0.5%	497	0.5%	-49	0.0
East Lothian	661	0.7%	598	0.6%	-63	-0.1
East Renfrewshire	578	0.6%	569	0.6%	-9	0.0
Edinburgh, City of	3,719	0.8%	3,265	0.7%	-454	-0.1
Eilean Siar	249	0.9%	207	0.7%	-42	-0.2
Falkirk	1,229	0.8%	1,092	0.7%	-137	-0.1
Fife	2,965	0.8%	2,639	0.7%	-326	-0.1
Glasgow City	5,099	0.9%	4,878	0.8%	-221	0.0
Highland	2,164	0.9%	2,100	0.9%	-64	0.0
Inverclyde	953	1.2%	795	1.0%	-158	-0.2
Midlothian	746	0.9%	608	0.7%	-138	-0.2
Moray	669	0.7%	557	0.6%	-112	-0.1
North Ayrshire	1,237	0.9%	1,114	0.8%	-123	-0.1
North Lanarkshire	1,791	0.5%	1,806	0.5%	15	0.0
Orkney Islands	111	0.5%	189	0.9%	78	0.4
Perth & Kinross	1,462	1.0%	1,517	1.0%	55	0.0
Renfrewshire	1,549	0.9%	1,418	0.8%	-131	-0.1
Scottish Borders	785	0.7%	746	0.7%	-39	0.0
Shetland Islands	148	0.6%	211	0.9%	63	0.3
South Ayrshire	1,053	0.9%	1,022	0.9%	-31	0.0
South Lanarkshire	2,980	0.9%	2,567	0.8%	-413	-0.1
Stirling	740	0.8%	641	0.7%	-99	-0.1
West Dunbartonshire	599	0.7%	572	0.6%	-27	0.0
West Lothian	1,051	0.6%	994	0.6%	-57	0.0

Footnote:

1) The number of people in each communal establishment type has been calculated using the percentages in Figure 23 of Release 2A of the 2011 Census.

Table 3: Comparing residents in educational communal establishments, 2011, by Council Area

Council Area	2011 Census		2011 CE Estimate		Difference between 2011 CE Estimate and 2011 Census	
	Number of People ¹	Percentage of population	Number of People	Percentage of population	Number of People	% of population (% points)
Scotland	37,670	0.7%	42,907	0.8%	5,237	0.1
Aberdeen City	5,791	2.6%	6,311	2.8%	520	0.2
Aberdeenshire	4	0.0%	34	0.0%	30	0.0
Angus	0	0.0%	18	0.0%	18	0.0
Argyll & Bute	161	0.2%	61	0.1%	-100	-0.1
Clackmannanshire	68	0.1%	80	0.2%	12	0.0
Dumfries & Galloway	48	0.0%	81	0.1%	33	0.0
Dundee City	3,691	2.5%	4,415	3.0%	724	0.5
East Ayrshire	62	0.1%	30	0.0%	-32	0.0
East Dunbartonshire	0	0.0%	18	0.0%	18	0.0
East Lothian	1,091	1.1%	1,163	1.2%	72	0.1
East Renfrewshire	0	0.0%	0	0.0%	0	0.0
Edinburgh, City of	8,838	1.9%	10,867	2.3%	2,029	0.4
Eilean Siar	30	0.1%	25	0.1%	-5	0.0
Falkirk	0	0.0%	0	0.0%	0	0.0
Fife	3,734	1.0%	4,007	1.1%	273	0.1
Glasgow City	8,151	1.4%	8,871	1.5%	720	0.1
Highland	118	0.1%	103	0.0%	-15	0.0
Inverclyde	0	0.0%	164	0.2%	164	0.2
Midlothian	25	0.0%	56	0.1%	31	0.0
Moray	444	0.5%	498	0.5%	54	0.1
North Ayrshire	32	0.0%	48	0.0%	16	0.0
North Lanarkshire	45	0.0%	161	0.0%	116	0.0
Orkney Islands	0	0.0%	0	0.0%	0	0.0
Perth & Kinross	1,153	0.8%	1,087	0.7%	-66	0.0
Renfrewshire	594	0.3%	757	0.4%	163	0.1
Scottish Borders	214	0.2%	230	0.2%	16	0.0
Shetland Islands	2	0.0%	25	0.1%	23	0.1
South Ayrshire	143	0.1%	183	0.2%	40	0.0
South Lanarkshire	92	0.0%	163	0.1%	71	0.0
Stirling	2,962	3.3%	3,237	3.6%	275	0.3
West Dunbartonshire	0	0.0%	1	0.0%	1	0.0
West Lothian	177	0.1%	214	0.1%	37	0.0

Footnote:

1) The number of people in each communal establishment type has been calculated using the percentages in Figure 23 of Release 2A of the 2011 Census.

Table 4: Comparing residents in hotels, guest houses, B&Bs, youth hostels & holiday accommodation, 2011, by Council Area

Council Area	2011 Census		2011 CE Estimate		Difference between 2011 CE Estimate and 2011 Census	
	Number of People ¹	Percentage of population	Number of People	Percentage of population	Number of People	% of population (% points)
Scotland	5,981	0.1%	4,871	0.1%	-1,110	0.0
Aberdeen City	195	0.1%	298	0.1%	103	0.0
Aberdeenshire	295	0.1%	180	0.1%	-115	0.0
Angus	192	0.2%	49	0.0%	-143	-0.1
Argyll & Bute	670	0.8%	279	0.3%	-391	-0.4
Clackmannanshire	18	0.0%	2	0.0%	-16	0.0
Dumfries & Galloway	296	0.2%	113	0.1%	-183	-0.1
Dundee City	31	0.0%	251	0.2%	220	0.1
East Ayrshire	15	0.0%	29	0.0%	14	0.0
East Dunbartonshire	5	0.0%	11	0.0%	6	0.0
East Lothian	106	0.1%	65	0.1%	-41	0.0
East Renfrewshire	0	0.0%	1	0.0%	1	0.0
Edinburgh, City of	541	0.1%	512	0.1%	-29	0.0
Eilean Siar	75	0.3%	13	0.0%	-62	-0.2
Falkirk	27	0.0%	48	0.0%	21	0.0
Fife	219	0.1%	214	0.1%	-5	0.0
Glasgow City	85	0.0%	702	0.1%	617	0.1
Highland	1,162	0.5%	522	0.2%	-640	-0.3
Inverclyde	10	0.0%	49	0.1%	39	0.0
Midlothian	26	0.0%	7	0.0%	-19	0.0
Moray	134	0.1%	44	0.0%	-90	-0.1
North Ayrshire	120	0.1%	110	0.1%	-10	0.0
North Lanarkshire	11	0.0%	53	0.0%	42	0.0
Orkney Islands	71	0.3%	11	0.1%	-60	-0.3
Perth & Kinross	742	0.5%	675	0.5%	-67	0.0
Renfrewshire	15	0.0%	22	0.0%	7	0.0
Scottish Borders	235	0.2%	102	0.1%	-133	-0.1
Shetland Islands	31	0.1%	50	0.2%	19	0.1
South Ayrshire	185	0.2%	115	0.1%	-70	-0.1
South Lanarkshire	21	0.0%	57	0.0%	36	0.0
Stirling	403	0.4%	228	0.3%	-175	-0.2
West Dunbartonshire	35	0.0%	13	0.0%	-22	0.0
West Lothian	10	0.0%	46	0.0%	36	0.0

Footnote:

1) The number of people in each communal establishment type has been calculated using the percentages in Figure 23 of Release 2A of the 2011 Census.

Table 5: Comparing residents in other communal establishments, 2011, by Council Area

Council Area	2011 Census		2011 CE Estimate		Difference between 2011 CE Estimate and 2011 Census	
	Number of People ¹	Percentage of population	Number of People	Percentage of population	Number of People	% of population (% points)
Scotland	12,591	0.2%	13,040	0.2%	449	0.0
Aberdeen City	489	0.2%	276	0.1%	-213	-0.1
Aberdeenshire	270	0.1%	180	0.1%	-90	0.0
Angus	171	0.1%	95	0.1%	-76	-0.1
Argyll & Bute	960	1.1%	1,890	2.1%	930	1.0
Clackmannanshire	667	1.3%	747	1.5%	80	0.2
Dumfries & Galloway	259	0.2%	362	0.2%	103	0.1
Dundee City	150	0.1%	70	0.0%	-80	-0.1
East Ayrshire	477	0.4%	554	0.5%	77	0.1
East Dunbartonshire	44	0.0%	35	0.0%	-9	0.0
East Lothian	40	0.0%	38	0.0%	-2	0.0
East Renfrewshire	8	0.0%	50	0.1%	42	0.0
Edinburgh, City of	1,194	0.3%	1,572	0.3%	378	0.1
Eilean Siar	12	0.0%	11	0.0%	-1	0.0
Falkirk	542	0.3%	532	0.3%	-10	0.0
Fife	840	0.2%	599	0.2%	-241	-0.1
Glasgow City	1,659	0.3%	1,017	0.2%	-642	-0.1
Highland	324	0.1%	727	0.3%	403	0.2
Inverclyde	261	0.3%	196	0.2%	-65	-0.1
Midlothian	133	0.2%	311	0.4%	178	0.2
Moray	845	0.9%	1,061	1.1%	216	0.2
North Ayrshire	148	0.1%	61	0.0%	-87	-0.1
North Lanarkshire	563	0.2%	674	0.2%	111	0.0
Orkney Islands	16	0.1%	3	0.0%	-13	-0.1
Perth & Kinross	1,156	0.8%	777	0.5%	-379	-0.3
Renfrewshire	33	0.0%	72	0.0%	39	0.0
Scottish Borders	47	0.0%	16	0.0%	-31	0.0
Shetland Islands	5	0.0%	19	0.1%	14	0.1
South Ayrshire	148	0.1%	86	0.1%	-62	-0.1
South Lanarkshire	236	0.1%	35	0.0%	-201	-0.1
Stirling	268	0.3%	323	0.4%	55	0.1
West Dunbartonshire	58	0.1%	30	0.0%	-28	0.0
West Lothian	568	0.3%	621	0.4%	53	0.0

Footnote:

1) The number of people in each communal establishment type has been calculated using the percentages in Figure 23 of Release 2A of the 2011 Census.